Selection Guide

MIG Wires

LINCOLN ELECTRIC
THE WELDING EXPERTS

Super Arc® and Super Glide®
Mild Steel and Low Alloy Wires

MicroGuard® Ultra surface treatment, with proprietary arc enhancement agents, facilitates excellent weld puddle control, very good wetting action, straight bead edges and a wider operating range. Plus, the exceptional feeding characteristics of Super Arc® and Super Glide®, made possible by MicroGuard® Ultra surface treatment, translate to reduced down-time and high operator appeal.

Electrode Name	AWS Class	General Description	Shielding Gas	WFS, Volts & Amps	Diameter .025"	.030"	.035"	.045"	.052"	1/16"
Mild Steel Wire										
Super Arc® L-50®	ER70S-3	Our most popular MIG wire, Super Arc® L-50®, premium copper coated wire, is an excellent choice for 70,000 psi (483 MPa) tensile strength, carbon steel base materials. Super Arc® L-50® has moderate levels of silicon and manganese for deoxidation and cleaning action. Designed for use on clean, oil-free, and rust-free base material. Will tolerate light millscale. Super Arc® L-50® also has an excellent reputation for feed-ability and trouble-free performance. Shielding gases include argon/carbon dioxide blends, argon/oxygen blends, straight carbon dioxide.	100% CO_2	WFS	—	75-300	100-250	125-200	—	—
			75-80%Ar / Balance CO_2	Volts	—	16-22	17-22	18-22	—	—
				Amps	—	35-130	80-175	145-200	—	—
			80-95%Ar / Balance CO_2	WFS	—	—	375-600	350-500	300-485	210-290
			95-98%Ar / Balance O_2	Volts	—	—	23-30	26-31	29-32	25-30
				Amps	—	—	195-275	285-340	300-430	325-430
Super Glide® S3	ER70S-3	Super Glide® S3, our premium bare MIG wire, like our Super Arc® L-50®, is an excellent choice for 70,000 psi (483 MPa) tensile strength, carbon steel base materials. Super Glide® S3 has moderate silicon and manganese deoxidizer levels and has an excellent reputation for feed-ability and trouble-free performance. Designed for use on clean, oil-free, and rust-free base material. Will tolerate light millscale. Super Glide® S3 MIG wire is an excellent choice when a bare or non-copper coated ER70S-3 wire is preferred. Shielding gases include argon/carbon dioxide blends, argon/oxygen blends, straight carbon dioxide, and three or four-part gas mixes.	100% CO_2	WFS	—	75-300	100-250	125-200	—	—
			75-80%Ar / Balance CO_2	Volts	—	16-22	17-22	18-22	—	—
				Amps	—	35-130	80-175	145-200	—	—
			80-95%Ar / Balance CO_2	WFS	—	—	375-600	350-500	300-485	210-290
			95-98%Ar / Balance O_2	Volts	—	—	23-30	26-31	29-32	25-30
				Amps	—	—	195-275	285-340	300-430	325-430
Super Arc® L-54	ER70S-4	Super Arc® L-54 premium copper coated MIG wire is your first choice when welding on metals with a light to medium presence of millscale. For best performance, use on clean, oil-free, and rust-free base material. Improved wetting at the toes of a weld when compared to welds made with ER70S-3 electrode. Super Arc® L-54 has higher silicon and manganese deoxidizer levels than AWS ER70S-3 electrodes to tolerate moderate levels of millscale. Shielding gases include argon/carbon dioxide blends, argon/ oxygen blends, straight carbon dioxide, and three or four-part gas mixes.	100% CO_2	WFS	—	75-300	100-250	125-200	—	—
			75-80%Ar / Balance CO_2	Volts	—	16-22	17-22	18-22	—	—
				Amps	—	35-130	80-175	145-200	—	—
			80-95%Ar / Balance CO_2	WFS	—	—	375-600	350-500	300-485	210-290
			95-98%Ar / Balance O_2	Volts	—	—	23-30	26-31	29-32	25-30
				Amps	—	—	195-275	285-340	300-430	325-430
Super Arc® L-56®	ER70S-6	Lincoln's® premium copper coated MIG wire, Super Arc® L-56® is an excellent choice for welding on metals with a medium to high presence of millscale. For best performance use on clean, oil-free, and rust-free base material. Best weld appearance and toe wetting when compared to ER70S-3 and ER70S-4 classifications. Super Arc® L-56® has high silicon and manganese deoxidizer levels. Superior feedability and excellent arc characteristics are trademarks of Super Arc® L-56®. Shielding gases include argon/carbon dioxide blends, argon/oxygen blends, straight carbon dioxide, and three or four-part gas mixes.	100% CO_2	WFS	100-250	75-300	100-250	125-200	—	—
			75-80%Ar / Balance CO_2	Volts	17-19	16-22	17-22	18-22	—	—
				Amps	35-90	35-130	80-175	145-200	—	—
			80-95%Ar / Balance CO_2	WFS	—	—	375-600	350-500	300-485	210-290
			95-98%Ar / Balance O_2	Volts	—	—	23-30	26-31	29-32	25-30
				Amps	—	—	195-275	285-340	300-430	325-430
Super Glide® S6	ER70S-6	Lincoln's® premium bare, mild steel MIG wire, Super Glide® S6 is an excellent choice for welding on metals with a medium to high presence of millscale. For best performance use on clean, oil-free, and rust-free base material. S6 will tolerate higher levels of surface contaminants than ER70S-3 or S-4 electrodes. Best weld appearance and toe wetting when compared to ER70S-3 and ER70S-4 classifications. High silicon and manganese deoxidizer levels. Super Glide® S6 MIG wire is the choice for you when a bare or non-copper coated ER70S-6 wire is pre-ferred. Shielding gases include argon/carbon dioxide blends, argon/oxygen blends, straight carbon dioxide, and three or four-part gas mixes.	100% CO_2	WFS	100-250	75-300	100-250	125-200	—	—
			75-80%Ar / Balance CO_2	Volts	17-19	16-22	17-22	18-22	—	—
				Amps	35-90	35-130	80-175	145-200	—	—
			80-95%Ar / Balance CO_2	WFS	—	—	375-600	350-500	300-485	210-290
			95-98%Ar / Balance O_2	Volts	—	—	23-30	26-31	29-32	25-30
				Amps	—	—	195-275	285-340	300-430	325-430
Low Alloy Wire										
Super Arc® LA-75	ER80S-Ni1	Super Arc® LA-75 is a premium copper coated, low alloy MIG wire certified to meet 80,000 psi (552 MPa) minimum tensile strength. Optimal mechanical properties are achieved with a 98-95% argon, 2-5% oxygen shielding gas blend. Can be welded with 90% argon, 10% carbon dioxide gas blend, as well as 75% argon, 25% carbon dioxide mixture. Charpy V-Notch impact testing meets or exceeds 20 ft. lbs. (27 J) at -50°F (-46°C). Provides best weld deposit with atmospheric corrosion resistance for ASTM A588 weathering steels.	80-95%Ar / Balance CO_2	WFS	—	—	130-600	300-450	—	—
			95-98%Ar / Balance O_2	Volts	—	—	15-30	20-30	—	—
				Amps	—	—	70-260	210-300	—	—
Super Arc® LA-90	ER80S-D2 ER90S-D2 (ER90S-G)	Super Arc® LA-90 is our premium copper coated, low alloy MIG wire manufactured to meet tensile strength requirements of 80,000 to 90,000 psi (552-620 MPa) minimum. The addition of 0.5% molybdenum provides strength after stress relief. Ideal selection when welding ASTM A182, A217, A234 and A335 high temperature pipe, fittings, flanges and valves, and A336 pressure vessel forgings. Best mechanical properties are achieved with an 98-95% argon, 2-5% oxygen shielding gas blend.	100% CO_2	WFS	—	—	100-250	125-200	—	—
			75-80%Ar / Balance CO_2	Volts	—	—	17-22	18-22	—	—
				Amps	—	—	80-175	145-200	—	—
			80-95%Ar / Balance CO_2	WFS	—	—	375-600	350-500	300-485	210-290
			95-98%Ar / Balance O_2	Volts	—	—	23-30	26-31	29-32	25-30
				Amps	—	—	195-275	285-340	300-430	325-430
Super Arc® LA-100	ER100S-G (ER110S-G) MIL-100S-1 (military)	Super Arc® LA-100, our premium copper coated, low alloy MIG wire is designed for use on 100,000 psi (690 MPa) tensile base material and those materials that require a minimum yield strength of 82,000 psi (565 MPa). Excellent for welding on ASTM A514, A543, A724 and A782 quenched and tempered plate or HY-80 base material. LA-100 provides excellent impact properties under higher heat input conditions. Best mechanical properties are achieved with an 98-95% argon, 2-5% oxygen shielding gas blend or 95% argon/5% oxygen. Also meets MIL-E-23765/2C, /2D, /2E specifications as a MIL-100S-1 classification.	90-95%Ar / Balance CO_2	WFS	—	—	—	300-450	—	170-300
			95-98%Ar / Balance O_2	Volts	—	—	—	20-30	—	21-29
				Amps	—	—	—	210-300	—	280-450

Super Glaze®
Aluminum MIG Wire

Super Glaze® controls the problems usually associated with aluminum wire feeding such as birdnesting, tangling and burnback, by providing fewer surface imperfections and feeding the wire with less force than typical competitive products.

Electrode Name	AWS Class	General Description	Shielding Gas	Volts & Amps	Diameter .030"	.035"	.040"	3/64"	1/16"
Aluminum MIG Wire									
Super Glaze® 1100	ER1100	Super Glaze® 1100 is highly resistant to chemical corrosion and has good crack resistance. Suitable for electrical and chemical applications utilizing aluminum base metal with little or no alloying elements. Like all 1XXX filler alloys, Lincoln's® Super Glaze® 1100 is the softest aluminum MIG wire and requires extra care to ensure good feeding.	100% Ar Ar/He Mixtures	Volts Amps	15-19 70-135	15-20 90-140	18-23 110-220	19-24 140-250	22-27 200-300
Super Glaze® 4043	ER4043	Super Glaze® 4043 is a great choice for the welding of heat-treatable base alloys and more specifically the 6XXX series alloys. It has a lower melting point and more fluidity than the 5XXX series filler alloys and is preferred by welders because of its favorable operating characteristics. ER4043 type wires are also less sensitive to weld cracking with the 6XXX series base alloys. Super Glaze® 4043 is suitable for sustained elevated temperature service, i.e. above 150°F (65°C).	100% Ar Ar/He Mixtures	Volts Amps	15-19 70-135	15-20 90-140	18-23 110-220	19-24 140-250	22-27 200-300
Super Glaze® 4047	ER4047	A lower melting point and higher fluidity are two advantages Super Glaze® 4047 has over its cousin Super Glaze® 4043. Super Glaze® 4047 produces very clean weld deposits and possesses excellent operator appeal. It can be used as a substitute for an ER4043 type wire to increase silicon in the weld metal, minimize hot cracking, and produce higher fillet weld shear strength. Super Glaze® 4047 is suitable for sustained elevated temperature service, i.e. above 150°F (65°C).	100% Ar Ar/He Mixtures	Volts Amps	15-19 70-135	15-20 90-140	18-23 110-220	19-24 140-250	22-27 200-300
Super Glaze® 5183	ER5183	Super Glaze® 5183 is designed to weld high magnesium alloys to meet higher tensile strength requirements. Use on 5083 and 5654 base materials when required tensile strengths are 40,000 psi (276 MPa) or greater. Typical applications are in the marine and cryogenic industries, and high strength structural aluminum fabrication.	100% Ar Ar/He Mixtures	Volts Amps	15-19 70-135	15-20 90-140	18-23 110-220	19-24 140-250	22-27 200-300
Super Glaze® 5356	ER5356	Super Glaze® 5356 is our most popular aluminum MIG wire. It is a great general purpose filler alloy designed for the welding of 5XXX series alloys when 40,000 psi (276 MPa) tensile strength is not required. 5356 is often chosen for its high shear strength.	100% Ar Ar/He Mixtures	Volts Amps	15-19 70-135	15-20 90-140	18-23 110-220	19-24 140-250	22-27 200-300
Super Glaze® 5554	ER5554	Super Glaze® 5554 is intended as a matching filer alloy when welding 5454 base alloys. This alloy is a lower magnesium content alloy and is often used for automotive wheels, over-the-road trailers, and rail tank cars where the weld filler metal chemistry must closely match the base material chemistry to maximize corrosion performance.	100% Ar Ar/He Mixtures	Volts Amps	15-19 70-135	15-20 90-140	18-23 110-220	19-24 140-250	22-27 200-300
Super Glaze® 5556	ER5556	Super Glaze® 5556 weld deposits will provide matching tensile strengths for the 5XXX alloys, such as 5083 and 5654. Contains increased amounts of magnesium or manganese compared to Super Glaze® 5356.	100% Ar Ar/He Mixtures	Volts Amps	15-19 70-135	15-20 90-140	18-23 110-220	19-24 140-250	22-27 200-300

BLUE MAX®
Stainless Steel MIG Wire

Blue Max® stainless steel MIG wires can be used for all position welding. Globular and spray transfer are recommended for downhand and horizontal only. Short circuiting mode and pulsed arc can be used for out-of-position welding. Gas shielding mixtures recommended are either argon and oxygen blend for spray and pulsed transfer, or a helium-rich blend for short circuiting and STT® welding.

Electrode Name	AWS Class	General Description	Shielding Gas	WFS, Volts & Amps	Diameter .025"	.030"	.035"	.045"	.052"	1/16"
Stainless Steel MIG Wire										
Blue Max® MIG 308LSi	ER308Si ER308LSi	This premium quality MIG wire is for joining 304 and 304L and other common "18-8" austenitic stainless steels. It is specially processed for superior feeding and arc stability.	(Short Circuiting Mode) 90%He/7.5%Ar/2.5%CO_2	WFS Volts Amps	— — —	— — —	140-425 19-23 55-170	100-275 19-23 100-185	— — —	— — —
			(Spray Transfer) 98%Ar/2%CO_2	WFS Volts Amps	— — —	— — —	400-475 23-25 180-210	240-360 24-26 195-260	— — —	175-300 26-32 260-390
Blue Max® MIG 309LSi	ER309Si ER309LSi	Blue Max® MIG 309LSi is a premium quality MIG wire ideally suited for joining mild steel or low alloy steel to stainless steel. This wire is specially processed to provide superior feeding and arc stability.	(Short Circuiting Mode) 90%He / 7.5%Ar/2.5%CO_2	WFS Volts Amps	— — —	— — —	120-425 19-23 55-170	100-275 19-23 100-185	— — —	— — —
			(Spray Transfer) 98%Ar/2%CO_2	WFS Volts Amps	— — —	— — —	400-475 23-25 180-210	240-360 24-26 195-260	— — —	175-300 26-32 260-390
Blue Max® MIG 316LSi	ER316Si ER3016LSi	When joining 316 and 316L stainless steels with the MIG process, Blue Max® MIG 316LSi is the answer. This premium quality wire is specially processed to provide superior feeding and arc stability.	(Short Circuiting Mode) 90%He/7.5%Ar/2.5%CO_2	WFS Volts Amps	— — —	— — —	120-425 19-23 55-170	100-275 19-23 100-185	— — —	— — —
			(Spray Transfer) 98%Ar/2%CO_2	WFS Volts Amps	— — —	— — —	400-475 23-25 180-210	240-360 24-26 195-260	— — —	175-300 26-32 260-390

CUSTOMER ASSISTANCE POLICY
The business of The Lincoln Electric Company® is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric® for advice or information about their use of our products. We respond to our customers based on the best information in our possession at that time. Lincoln Electric® is not in a position to warrant or guarantee such advice, and assumes no liability, with respect to such information or advice. We expressly disclaim any warranty of any kind, including any warranty of fitness for any customer's particular purpose, with respect to such information or advice. As a matter of practical consideration, we also cannot assume any responsibility for updating or correcting any such information or advice once it has been given, nor does the provision of information or advice create, expand or alter any warranty with respect to the sale of our products.

Lincoln Electric® is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric® is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric® affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.

IMPORTANT
Arc Welding is safe when sufficient measures are taken to protect the welder from potential hazards. Recognize and safeguard yourself against these hazards, such as electric shock, overexposure to arc radiation, fumes and gases. Every welder should be familiar with the ANSI Z49.1 documents, *"Safety in Welding and Cutting"*, available from the American Welding Society, Miami, Florida. Also request bulletins E205 *"Arc Welding Safety"* and E201 *"Arc Welding Safety Chart"*, available from The Lincoln Electric Company®.

CERTIFICATIONS
ISO 14001 and 9001 certified – manufactured to standards for environmental and quality management systems.

www.lincolnelectric.com